Responses to Comments from EPA on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
1	Executive Summary	Please make any needed revisions to this section to reflect changes made elsewhere in the Work Plan.	Changes made as necessary for consistency.
2	Table 2-1, Conceptual Site Model, Page 2-3; Table 4-1, Building Radionuclides of Concern, Page 4-2; and Appendix A, Sampling and Analysis Plan, Table 10-1, Conceptual Site Model, Page 37	The Radionuclides of Concern (ROCs) listed for Buildings 103 and 113 are Sr-90, Cs-137, and Pu-239. Ra-226 is not included, although the June 2010 Building 103 Final Status Survey Report identifies 226Ra as a ROC. In addition, we understand that the Navy's Radiological Affairs Support Office has stated that Ra-226 is an ROC at all radiologically impacted sites. Please add 226Ra as an ROC for Buildings 103 and 113 or explain why this is unnecessary.	Ra-226 is included as an ROC for Building 103 exposed soil based on its inclusion in the FSS and the accompanying rationale (TtEC, 2010); see modified Table 2-1 and Table 3-4. However, no documented basis or rationale was found to add Ra-226 as an ROC for Building 113. Therefore, Ra-226 was not added as an ROC for Building 113. The origin of the statement that 'the Navy's Radiological Affairs Support Office has stated that Ra-226 is an ROC at all radiologically impacted sites' is unclear. RASO's current stance is that ROCs for impacted sites are based upon the Historical Radiological Assessment (HRA). The Navy requests that the EPA please provide documentation where this statement has previously made by RASO.
3	Section 3.1, Data Quality Objectives, Page 3-1	Step 3 describes the planned analysis of surface soil and subsurface soil samples "for the applicable ROCs." The final July 2010 workplan for the base-wide removal of storm drains and sanitary sewers includes a requirement that soil excavated from an Installation Restoration Program site be sampled for chemicals of concern before use as trench backfill. Please supplement the planned analyses to demonstrate that soil which may be used as backfill meets the backfill acceptance criteria presented in Worksheets #15.6 through #15.14 in Appendix A or explain why the additional analyses are not appropriate. This comment also applies to other subsections in Section 3 and Appendix A.	The Parcel B remedial action had been previously implemented with respect to the durable cover and soil remediation, and was acceptable apart from the radiological issues that led to this task order being issued. Had it not been for these radiological issues, the parcel would have been acceptable for transfer. Therefore, if the soil is found to not contain radiological contamination, the material is fit for reuse.
4	Section 3.1, Data Quality Objectives, Page 3-1	Step 4 includes references to Table 3-1 and Figure 3-1 which list or show the 24 Trench Units (TUs) proposed for excavation in Phase 1 of the planned sampling effort. We recommend, that as part of Phase 1, TUs 4, 26, 33, 36, 131 be replaced with 55, 19, 60, 42, and 53. Our rationale is as follows. TU 55 – This TU was overexcavated three times. EPA/CDPH recommended resampling this TU due to "low variability of FSS_SYS for Ac-228 and Bi-214 and FSS_Bias for Bi-214 and Cs-137 and inconsistent gamma statics" as the highest gamma static measurement was less than	Table 3-1 and Figure 3-1 have been modified to include TUs 19, 42, 53, 55, and 60 in the planned Phase 1 sampling effort; and TUs 4, 26, 33, 36, and 131in the planned Phase 2 sampling effort.

Comment #	Page (§)	Comment	Response
		half the maximum gamma scan measurement. In addition, this is one of only two TUs that were backfilled with excavated soil from a stockpile. TU 19 – This TU was recommended by EPA/CDPH for resampling due to a difference in mass between the on-site and off-site laboratory samples – there was a difference of 102 grams suggesting that the sample was either modified or a different sample was sent to the off-site lab. In addition, the Ac-228, Bi-214, and K-40 FSS_SYS plots have slope breaks indicating multiple populations. It was backfilled with four overburden units and some imported fill. TU 60 – This TU was overexcavated twice and recommended by EPA/CDPH for resampling due to "due to different weights for on- and off-site lab and counting of samples at off-site lab over a year later, suggesting possible sample substitution; inconsistent results between off-site and on-site lab; and low variability in Bi-214 FSS_SYS data set." There was a difference of 70 grams between the on-site and off-site sample mass, suggesting the sample was substituted or subject to tampering. It was backfilled with three overburden units and imported fill. TU 42 – This TU was over-excavated four times and recommended by EPA/CDPH for resampling due to "samples being counted on 4 different days and not sequentially (suggesting a potential for sample substitution), FSS_Bias having lower variability than FSS_SYS for Ac-228, Bi-214, and K-40, and evidence of different populations between data sets on Q-Q plots." It was backfilled with four overburden units and some imported fill. TU 53 – This TU was over-excavated three times and recommended by EPA/CDPH for resampling due to "low variability of FSS_SYS and FSS_Bias for Bi-214, apparent different population for K-40 FSS_Bias, and inconsistent off-site lab results." It was backfilled with two overburden units and imported fill.	
5	Section 3.6.2.2, Site Preparation, Page 3-21	This section describes the removal of asphalt cover to expose target soils. A review of Figure 3-1 (Soil Investigation Approach) and Figure 3 (Drainage Pattern and BMP Map) of Appendix D (Stormwater Pollution Prevention Plan) indicates that clearing and grubbing will likely be required for TUs 5, 13, 14, 23, 25, 27, possibly the south end of TU 20, and for the Building 114 footprint. These TUs are located in or extend into areas that are covered with two feet of clean soil and vegetation, as	The following new text has been added to Section 3.6.2.2: ***"If a trench segment (or portion thereof) is in an area where the durable cover is comprised of two feet of soil and vegetation, the area will be cleared of vegetation, soil, and/or debris to provide site access or otherwise accommodate project activities. Excavated soil will be handled, surveyed, and sampled as described in Section 3.6.3.2. Cleared asphalt, debris, and/or***

Comment #	Page (§)	Comment	Response
		discussed in the Remedial Action Work Plan for Parcel B (November 2012) and other documents. Please revise the Work Plan to clarify whether clearing or grubbing and removal of the soil durable cover may be necessary at some TUs and confirm that the soil cover will be removed before the gamma survey will be conducted. If grubbing will be required, please provide information on where clearing and grubbing, and removal of the soil cover, may be necessary, the management and disposal of any wastes generated, and restoration of the durable cover.	***vegetation will be handled according to Section 7.0. Following backfill of the trenches the area will be restored in accordance with Section 3.6.7."*** The following new text has been added to Section 4.6.2: ***"If the building interior is unpaved and the previously-surveyed floor is beneath a durable cover comprising two feet of soil, the overburden soil will be removed to provide site access or otherwise accommodate project activities. Excavated soil will be handled, surveyed, and sampled as described in Section 3.6.3.2. Following backfill of the trenches the area will be restored in accordance with Section 3.6.7."*** The soil and vegetation to be generated from clearing/grubbing or soil durable cover removal activities have been added to Table 7-1.
6	Section 3.1, Data Quality Objectives, Page 3-1	Step 5 (Develop Decision Rules) discusses a point-by-point comparison with remediation goals (RGs) at agreed upon statistical confidence levels. We repeat our request, made on the draft workplan for Parcels D-2/UCs, that the Navy clarify the meaning of the phrase "agreed upon statistical confidence levels" or delete the phrase. The phrase suggests something other than a direct comparison of each sample result to the relevant RG. This phrase is also used in the Executive Summary, Section 4.1, Section 5.2, and Appendix A.	The language regarding statistical confidence level was added per EPA comments received on the draft Parcel G Work Plan. Language was provided by EPA as part of General Comment 12d, and included verbatim. "If the investigation results demonstrate exceedances of the RGs determined from a point by point comparison with the statistically based RGs at agreed upon statistical confidence levels and are not representative of background and naturally occurring material, remediation will be conducted and a RACR will be developed." Due to the length of the comment, please refer to the Parcel G Work Plan, RTCs to EPA Comment 12D of the Draft Parcel G Removal Site Evaluation Work Plan.
7	Section 3.1, Data Quality Objectives, Page 3-2	Step 6 (Specify the Performance Criteria) states, "If the concentrations of radionuclides in the uranium natural decay series are consistent with the assumption of secular equilibrium, then the 226Ra concentration is NORM, and site conditions comply with the Parcel B ROD RAO." Please explain how results for radionuclides not in the U-238 decay series will	The radionuclides not in the U-238 decay series have been removed from the listed radionuclides.

Comment #	Page (§)	Comment	Response
		be used (e.g., Th-232, Th-228, U- 235). This comment also applies to Worksheet #11 in Appendix A.	
8	Section 3.1, Figure 3-2	The bottom triangle in Figure 3-2 says "Is any 226Ra Concentration > 238U + RG?" Please explain the basis for this comparison. Is this part of an evaluation of secular equilibrium? If, so, why single out the comparison of Ra226 and U238, leaving out other radionuclides in the decay series? And why use the RG as a threshold difference between the two concentrations?	Figure 3-2 was incorrect. It was corrected to read, "Is ^{226}Ra concentration consistent with ^{238}U, ^{234}U, and ^{230}Th?"
9	Section 3.3.1, Investigation Levels, Pages 3-4 and 3-5	The text states that gamma static counts and spectral analysis results will be compared to background, and biased samples will be collected if locations with elevated activity are identified. It also describes plans to calculate gamma scan ILs based on background following mobilization. Please clarify what background areas or datasets are proposed, including whether the Navy intends to use the same dataset used for Parcel G (i.e., the area near Building 809).	Section 3.3.1 now reads as follows (new text in bold): *"Appropriate instrument- and site-specific gamma scan ILs for site ROC and gross gamma (i.e., full-energy spectrum) measurements will be* ***those deemed applicable by the Memorandum to File Regarding Radiological Remediation Goals for the Removal Site Evaluation Workplan for Parcels B, C, D-1, D-2. E. G. UC-1, UC-2, UC-3 (Navy, 2021), which were derived as part of the HPNS Background Soil Study (CH2M Hill, 2020). See Section 3.4.3 for additional information."***
10	Section 3.4, Radiological Investigation Design, Pages 3-5 to 3-12	The Work Plan requires re-excavation of soil in the Phase 2 TUs if contamination is identified in any of the Phase 1 TUs. The workplan should indicate the need to avoid undue mixing of excavated soils from the Phase 1 TUs to minimize dilution of any contamination. That includes practices such as sieving to dry wet soils.	Section 3.4.4 now contains the following new text: ***"Trench unit soils will be segregated from other trench unit materials throughout the excavating, drying (if necessary), handling, screening, and sampling process to avoid cross-contamination or dilution of contamination."***
11	Section 3.4.1, Number of Samples, Page 3-7	The text states that the data quality assessment (DQA) of SU data will include preparation of a retrospective power curve (based on the MARSSIM Appendix I guidance) to demonstrate that a sufficient number of samples was collected to meet the project objectives. The last sentence also states that if necessary, additional samples may be collected to comply with the project objectives. Please clarify when this analysis will be completed. Completing the analysis as soon as practical will minimize the risk of rework and project delay.	Section 3.4.1 now reads as follows (new text in bold): "*…the retrospective power will be determined* ***as soon as practical*** *after the survey is completed.*"
12	Section 3.4.1, Minimum Number of Samples, Page 3-8	The text states, "The minimum number of samples per SU [survey unit] will be developed based on the variability observed in the RBA data. A retrospective power curve will be prepared to demonstrate that the number of samples from each SU was sufficient to meet the project	Section 3.4.1, 3rd paragraph states, "*The data quality assessment (DQA) of SU data will include a retrospective power curve (based on the MARSSIM Appendix I guidance) to demonstrate that a*

Comment #	Page (§)	Comment	Response
		objectives. If necessary, additional samples may be collected to comply with the project objectives." Please revise the Work Plan to include the formula or reference to a MARSSIM section that illustrates the formula to be used to calculate the retrospective power curve.	*sufficient number of samples was collected to meet the project objectives*."
13	Section 3.4.1, Number of Samples, Page 3-8	The text states that a minimum of 18 systematic soil samples will be collected for each 152 cubic meters of soil in each TU or SU. As stated in SAP Worksheet #17 (Sampling and Survey Design and Rationale, page 87) of Appendix A, 25 samples should be collected initially. Please revise Section 3.4.1 to be consistent with SAP Worksheet #17 and discuss how a parcel-specific number of samples will be derived.	The SAP was modified to remove the requirement to collect 25 samples initially. That rationale was based on uncertainty regarding the RBA data yet to be collected. However, it will have already been collected and analyzed by the time field work for this project begins. Other than verifying a minimum number has been collected, there are no plans to derive a parcel-specific number of samples.
14	Section 3.4.3, Radiological Background, Page 3-8	The Work Plan states that "The RGs presented in Table 3-5 are incremental concentrations above background." Except for the RG for Ra-226, this statement is incorrect. Please correct.	The phrase has been deleted.
15	Section 3.4.3, Radiological Background, Page 3-8	The Work Plan describes the collection of RBA samples and additional RBA measurements. Please clarify whether the collection of additional background data is planned and provide details about the planned use of the background data collected in 2019. This comment also applies to Section 1 (Introduction), Section 3.1 (Data Quality Objectives), and Section 5.5 (Comparison to Background).	The references to collection of RBA samples have been deleted from Section 1 and Section 3.1. Section 3.4.3 now reads as follows (new text in bold): *"RBA samples and measurements* ***have been*** *collected and evaluated to provide generally representative data sets estimating natural background and fallout levels of man-made radionuclides for the majority of soils at HPNS* ***and presented in the Final Background Soil Study (CH2M Hill, 2020).*** *The RBA characterization incorporated three survey techniques: gamma scans, surface soil sampling, and subsurface soil sampling to support data evaluations.* ***Background values for Reference Background Area 1, located in Parcel B, are found in Table 6-6 and of the Background Soil Study and discussed in Section 5.2.1 of the same document (CH2M Hill, 2020). These soil background values will be utilized as deemed applicable by the Memorandum to File Regarding Radiological Remediation Goals for the Removal Site Evaluation Workplan for Parcels B, C, D-1, D-2. E. G. UC-1, UC-2, UC-3 (Navy, 2021).***

Responses to Comments from EPA on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
16	Section 3.4.4, Phase 1 Trench Unit Design, Page 3-9	The text states that the thickness of soil placed on RSY pads will not exceed 6 inches to control the measurement geometry. Other parts of the Work Plan, including Section 3.6.3.2.2 and Worksheet #14 in Appendix A, state that the soil column thickness will not exceed 9 inches. Please reconcile these statements and confirm, if correct, that the maximum volume of each batch of excavated material will be 152 m3 regardless of the area or thickness of soil placed on a RSY Pad.	Section 3.4.4 has been revised to indicate a maximum thickness of 9 inches. The survey unit volume remains limited to 152 cubic meters.
17	Section 3.4.5, Phase 2 Trench Unit Design, Page 3-11; Table 3-2, Phase 2 Soil Trench Units; and, Figure 3-4, Example Phase 2 – Trench/Survey Unit and Sample Locations	It would be helpful if the text, table, and figure were more easily comparable (i.e., if they all used the same units of length (feet or meters), and the same nomenclature (e.g., sidewall samples or buffer samples). In addition, we are unable to reconcile "Number of Systematic Samples from Sidewalls and Bottom" listed in Table 3-2 for TU 43 (84) and the number of borings shown on Figure 3-4. We count 57 sidewall or bottom samples associated with the borings shown in Figure 3-4: one bottom sample in each of 18 borings inside the TU and three samples associated with each of 13 borings in the "TU buffer." (i.e., 54 TU samples and 39 buffer zone samples, but Table 3-2 specifies 36 Fill Unit samples and 84 other samples). Please explain this apparent discrepancy and make any needed corrections.	The document has been revised to remove any mention of 'buffer samples'. Imperial units (feet, inches) are used for descriptions involving trench survey units, and metric units (meters, centimeters) are used for descriptions involving building surveys to align with the Parcel G Site Evaluation Work Plan. Table 3-2 was found to be incorrect. Additional columns were added, headings modified, and values corrected to represent more clearly the sampling rules given in Section 3.4.5. In addition, Figure 3-4 was corrected to reflect 14 sidewall sample borings, instead of 13 shown in the incorrect version.
18	Section 3.5.1.1, RS-700 Gamma Scan Data Analysis, Page 3-14	This section discusses how elevated radioactivity will be identified using the RS-700 system. a. The text states that local Z-scores are calculated using a moving average to identify elevated count rates where the background is variable, for SUs that meet this criterion, and semi-local Z-scores are calculated using the global average but with a moving average for the standard deviation to identify smaller areas of elevated count rates that may not be otherwise identified by the initial Z-score review, for SUs that meet this criterion. Please clarify how the moving average and global average are calculated, and the criteria to be used to determine whether a SU has a variable background. b. The text states that any location with four or more regions of interest (ROIs) having a Z-Score, local Z-score, or semi-local Z-score greater than 3 (Z>3) is marked for follow-up. Please explain the basis for only	Section 3.5.1.1 now reads as follows (new text in bold): "*The data collected during the gamma scan using the RS-700 system will be* ***processed using numerical and graphical methods. The data will be plotted using ArcGIS to ensure adequate scan coverage. Typically, the overlap between passes is designed for 120-150% coverage. The data will be re-projected into a desired coordinate system and X Y points added to the data file. The data file will be exported to Microsoft Excel for further exploratory data analysis. A tractor speed histogram will be developed using the position-correlated data as a quality control check to verify the proper speed of the detector over the ground.*** ***The data will be checked for errors as well as examined for potential outliers and other anomalous features. Descriptive statistics (e.g., range, median, mean, and standard deviation) will be used to assess the data set. The data will be graphed on a***

Comment #	Page (§)	Comment	Response
		identifying locations with four or more ROIs having a Z-score greater than 3 for follow-up.	***cumulative frequency diagram to test departure from normality and to reveal characteristics of the data distribution such as dissimilar populations and data set outliers that may not be apparent otherwise. Data appearing as a straight line indicate a normally distributed data population. Non-linear regions suggest dissimilar populations included within the larger population.*** ***Contour maps will be created using the RS-700 data to aid in field investigations as well as to facilitate the selection of biased measurement locations. The mean and standard deviation of the data set will be calculated and used to develop color-coded contour maps based on sigma values (i.e., the number of standard deviations each measurement lies from the mean). The contouring process involved creating a regularly spaced grid and assigning values to every spot on the grid. Grid node values will be assigned using a weighted average based on the inverse square law, which describes how radiation levels drop off with distance from a source. Once the grid is complete, color-coded contours will be created from grid node values within the specified ranges of values. The contouring process tends to smooth over single data points with lower sigma values while accentuating clustered areas or single locations with higher sigma values. This is the desired effect which aids in the data analysis by focusing attention on those areas most likely to contain discrete radioactivity."***
19	Section 3.6.2.1, Locating and Confirming Boundaries, Page 3-21	The text describes two sources of information which will be used to identify boundaries and depths of the former TUs and SUs (Tetra Tech EC [TtEC] reports and field observations). a. Please clarify whether the boundaries will account for remediation activities by TtEC which resulted in targeted excavation of soils with elevated radionuclide concentrations. b. Please clarify whether the boundaries will reflect slumping/sloughing of sidewalls which occurred in some TUs during the period the TtEC TU excavations were open. c. Please comment on the uncertainty associated with the methodology used to locate the previous excavation limits, particularly the horizontal	The following new text has been added to Section 3.6.2.1: ***"Boundaries will be based upon completed as-builts of the Parcel B trenches, including any soils outside the original trenches that were removed for remediation purposes, as well as material removed as a result of sidewall sloughing. Field observations will be made during re-excavation activities, particularly with respect to changes in soil texture/appearance, to ensure that re-excavations are performed to within six inches of previous trench limits."***

Comment #	Page (§)	Comment	Response
		limits, and the level of confidence that the uncertainty is less than 6 inches, the planned extent of overexcavation of Phase 1 TUs. d. We recommend that the Navy make and document field observations to assess whether the TU boundaries were accurately located (e.g., whether differences in soil texture or appearance were observed between soils on either side of the marked TU boundaries).	
20	Section 3.6.2.2, Site Preparation, Page 3-22	The text states that "A minimum of two feet from the closest observed utility will be maintained to prevent accidental exposure to the utility, based on the utility hazard or importance." Please clarify whether there may be exceptions to this requirement, as we understand was the case in some Parcel G TUs.	Section 3.6.2.2. now reads as follows (new text in bold): *"A minimum of two feet from the closest observed utility will be maintained to prevent accidental exposure to the utility, based on the utility hazard or importance.* ***If an exception to this condition is required to complete investigation activities, the proposed work will be examined and approved by the Navy ROICC and CSO representatives."***
21	Section 3.6.3.2.3, General Process, Page 3-24	This section states that scanning will be performed by scanning straight lines at a rate not to exceed 0.25 meters per second (m/s) with a consistent detector distance from the soil surface (approximately four inches above the surface), and that each traverse of the RSY will be offset from the next detector path based on the instrument's detector size. Please reference a procedure or provide an explanation for how the consistency of the speed of movement or distance of the detector from the surface will be maintained and how the detector paths will be identified to ensure no gaps in gamma scan coverage will occur during the scanning.	Section 3.5.1.1 now includes the following new text: ***"The [RS-700] data will be plotted using ArcGIS to ensure adequate scan coverage. Typically, the overlap between passes is designed for 120-150% coverage. The data will be re-projected into a desired coordinate system and X Y points added to the data file. The data file will be exported to Microsoft Excel for further exploratory data analysis. A tractor speed histogram will be developed using the position-correlated data as a quality control check to verify the proper speed of the detector over the ground."***
22	Section 3.6.3, General Process, Page 3-25	The text states that "A biased soil sample will be collected from the approximate location of the highest elevated gamma scan measurement." In contrast, Section 3.3.1 states that "If the gamma spectroscopy detector system static measurements identify locations with elevated activity, biased samples will be collected." Please clarify whether biased samples will be collected based on gamma scan or static measurements (or both).	Section 3.4.1 now includes the following new text: ***"Biased samples will be collected from the location of the highest scan z-score location for each gamma-emitting ROC, as well as from the highest scan z-score location from ROI 10 (gross gamma). For ROCs that have multiple RS-700 ROIs (i.e. 226Ra), the highest scan z-score among those ROIs will be selected for biased sampling. In addition, biased samples will also be collected if gamma static measurement identify elevated locations as described in Section 3.3.1."***
23	Section 3.6, Radiological Investigation	Please add a statement that, upon request, soil will be provided to the regulatory agencies for split sample analysis, and in this section or Appendix A briefly describe the proposed procedure for generation of a split sample. Our understanding is that the Navy contractor carried out the	Section 3.6 now contains the following new text: ***"Upon request, soil for split samples will be made available to regulatory agencies during field activities for independent analysis. Locations will be determined in the field, and will allow***

Comment #	Page (§)	Comment	Response
	Implementation, Pages 3-19 to 3-34	following steps during the Parcel G retesting: i) placed soil to be sampled on a new, disposable sheet of plastic using a disposable scoop; ii) used the scoop to homogenize the soil; iii) alternately fill the primary Navy sample container and the split sample bag provided by the EPA representative; iv) pressed air from the split sample bag and closed the zipper-lock to seal bag; v) used a disposable towel to wipe any dust from the outside of the bag; vi) collected a swipe sample from the outside of the bag and analyzed the swipe to check that the sample meets release limits (less than 20 dpm/100 cm2 alpha, and less than 1,000 dpm/100 cm2 beta); and vii) signed a COC form provided by the EPA representative to relinquish the sample.	***for sufficient volume for Navy samples and any necessary quality assurance/quality control samples. Sampling, handling, and chain-of-custody procedures will adhere to those established for the specific type of soil sample being collected (e.g. RSY pad sampling, drilling and sampling, surface soil investigation sampling), as established in the Sampling and Analysis Plan (SAP, Appendix A) or the Waste Management Plan (WMP, Section 7)."*** The SAP includes split samples on WS#12, and states split samples "May be collected if requested by other stakeholders (USEPA or CDPH) and will be evaluated by the stakeholder. Measurement and performance criteria will be outlined in the stakeholder guidance documents."
24	Section 3.6.6.1, Phase 1 Trench Unit Samples, Pages 3-31 to 3-32	The planned format for sample identification does not appear to distinguish between systematic and biased samples. Will biased samples be identified by adding a "B," as has been done for Parcel G samples?	The format for sample identification for Phase 1, Phase 2, and surface soil samples has been modified to add the use of an identifier for biased samples.
25	Section 3.6.7.1, Deconstruction of Radiological Screening Yard Pads, Page 3-33	Please describe the meaning of "RSY pad buffer material."	The phrase "RSY pad buffer material" has been deleted. Section 3.6.7.1 now reads as follows: *"If the RSY pad material cannot be reused on-site, it will be consolidated on-site for off-site disposal at an approved disposal facility (Section 7.0)."*
26	Section 3.7, Radiological Laboratory Analysis, Page 3-34	The last bullet point of Section 3.7 states, "At Buildings 103, 140, and 142 where 239Pu [plutonium-239] is a ROC, at least 10 percent of randomly selected samples will be analyzed by alpha spectroscopy for 239Pu. Please provide a rationale for analyzing fewer than 100% of the samples from locations where 239Pu is an ROC or revise Section 3.7 to ensure all samples are analyzed for 239Pu. Also, please clarify why Building 140 is described in Section 3 rather than Section 4 (i.e., is there potentially contaminated soil associated with Building 140?).	The Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (MARSSIM; U.S. Environmental Protection Agency et al., 2000) Section 4.3.2 provides justification for the use of surrogates, such as the use of a measured 137Cs concentration as a surrogate. If an established ratio between radionuclides does not exist, MARSSIM recommends that at least 10 percent of the final status survey measurements (both direct measurements and samples) include analyses for all radionuclides of concern (ROCs).

Comment #	Page (§)	Comment	Response
			Cesium-137, Strontium-90, and Plutonium-239 are fallout components – if one of the aforementioned radionuclides are present, all will be. Cs-137 is the easiest and most reliable to detect, and so is analyzed in 100% of samples. If not detected, it is reasonable to infer that Pu-239 is not present. If Cs-137 is detected, analysis for Pu-239 is performed. Building 140 is addressed in Section 4; however, soil/sediment samples also will be collected consistent with the Building 140 Technical Memorandum (TtEC, 2011), which will be analyzed in accordance with Section 3.7.
27	Section 4, Building Investigation Design and Implementation	Additional changes to this section may be needed to reflect the outcome of the ongoing evaluation of the protectiveness of the building remediation goals.	The potential is noted.
28	Section 4.1, Data Quality Objectives, Page 4-1	Step 6 includes a comparison of each net alpha and net beta result to the corresponding RG. The proposed approach appears to be inconsistent with the 2006 Basewide Radiological Removal Action Memorandum and the January 2009 Amended ROD for Parcel B which do not indicate that the remediation goals are to be applied as an incremental concentration above background. This comment also applies to Section 5.4.	The building measurements collected are of gross activity, and are not radionuclide-specific. Consequently, material-specific backgrounds are required in order to effectively compare measurements from various building materials to the RG.
29	Section 4.4.3.5, Building 140, Page 4-8	Based on Table 13-2 (Location-Specific Applicable or Relevant and Appropriate Requirements) of the Amended Parcel B Record of Decision, Hunter's Point Shipyard, San Francisco, California, dated January 14, 2009 (Amended ROD), Building 140 is eligible for inclusion on the National Register of Historic Places. Please revise the Work Plan to discuss Building 140 and how its potential inclusion on the National Register of Historic Places may affect planned survey and/or remediation work.	Section 4.4.3.5 now contains the following new text: ***"The HRA (NAVSEA, 2004) indicates that Building 140 is radiologically impacted because of its association with Drydock 3. Drydock 3 was historically used as a decontamination facility for ships that participated in atomic weapons testing, as the possible location of removal of radium-bearing devices from ships during maintenance, and as the former location of radium-bearing devices. The various decontamination methods for ships that participated in atomic and nuclear weapons testing included sandblasting of shipboard components and acid washing of desalinization systems.*** ***During dewatering operations, residual decontamination wastes may have been drawn into the collector channel located at the bottom of Drydock 3 and into the suction channel and then***

Comment #	Page (§)	Comment	Response
			forced through the discharge piping using the pumps housed in Building 140, thereby potentially contaminating the discharge channel and subsequently entering the bay. Because of the construction of the dewatering system from Drydock 3, only the interior portions of the suction channel, discharge piping, and discharge channel could possibly have become contaminated with decontamination media. ***Gilbane will recollect data as presented in the Final Technical Memorandum to Support Unrestricted Radiological Release of Building 140 Including the Suction Channel and Discharge Piping (TtEC, 2011). To achieve this, the anticipated tasks to be performed within Building 140 include:*** • ***Initial inspection of the building, suction channel and discharge piping*** • ***Cleanup of debris*** • ***Scanning of electrical cabinets*** • ***Evaluation of the pump pit to include an underwater video inspection, collection of sediment samples (if possible), collection of water samples, and collection of debris samples*** • ***A final status survey of the building interior and discharge channel using the same survey units as presented in the Final Technical Memorandum (TtECI, 2011). Survey unit layouts are shown on Figure 4-7.*** • ***Collection of samples from the discharge piping*** ***The Parcel B ROD indicates that Building 140 is eligible for inclusion on the National Register of Historic Places (Navy, 2009). The aforementioned tasks to be performed within Building 140 will have no effect on the structural nor exterior elements of the building, nor will they involve removal of interior equipment unless that equipment is found to be radiologically contaminated. Therefore, the anticipated activities within Building 140 are not expected to affect nor disturb the historical elements of the building."***

Responses to Comments from EPA on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
30	Section 4.4.3.5, Building 140, Page 4-8	We are unclear on the planned investigation activities at Building 140. The text describes three class 1 floor areas plus "Installed electrical cabinets, flooded pump pit, discharge piping, and the discharge channel." Table 4-4 includes a footnote that "Data to be collected consistent with the *Technical Memorandum to Support Unrestricted Radiological Release of Building 140 Including the Suction Channel and Discharge Piping* (TtEC, 2011)," but does not list or further describe the survey units. We are unable to locate any information on survey units in the referenced figure (Figure 4-7). Please describe how the 2011 Technical Memorandum guides or affects the planned investigation activities and provide additional detail on planned investigation activities at or associated with Building 140, including a figure that depicts the proposed survey units.	See above response to comment #29.
31	Section 4.5.8.1, Alpha-Beta Scan Rate, Page 4-14	This section states movement of large area detectors, such as the Ludlum Model 43-37, will be surveyor-controlled, and the average scan rate will be monitored during scanning and verified during data evaluation; however, the text does not state how scan rates will be monitored or how often data evaluation will be performed to ensure the project-required scan rates are met such that the MDCs of such scans are met and the data are of sufficient quantity and quality to meet the project objectives. Please revise the Work Plan to provide details about scan rate monitoring and verification.	The Work Plan states that the scan rates for planned instruments will be verified manually in each SU by direct observation and measurement of the time elapsed while scanning a known distance. Scan speed verification methods will be determined during field planning to include instructions for documenting testing and verification monitoring of scan rates to ensure scan rates meet data quality objectives.
32	Section 4.6.3.2, Survey Unit and Reference Background Area Alpha-Beta Scanning, Page 4-24	The text states that "The total surface area of remaining, accessible impacted surfaces to be scanned will be 100 percent in Class 1 SUs, 50 percent in Class 2 SUs, and up to 10 percent in Class 3 SUs." Please explain how the percentage of Class 3 SUs to be scanned will be determined and/or specify a minimum percentage, along with a rationale for the specified value.	The percentage of Class 3 SUs to be scanned will be determined during field planning with the goal of 10 percent of accessible surfaces per Section 4.4.3 of the Work Plan. The Class 3 surface area to be scanned will be determined by taking the total accessible surface area multiplied by 10 percent to ensure up to 10 percent coverage. Due to potential accessibility issues, such as highly deteriorated conditions, the Work Plan includes flexibility because the actual survey coverage obtained may be less than 10 percent.
33	Section 5.5, Comparison to Background, Pages 5-9 to 5-10	The text states that "Sample and static measurement data shown to be NORM or anthropogenic background comply with the Parcel B ROD RAO, even if the results exceed the corresponding RG values." As we commented on the Parcel D-2/UC Work Plan, for soil sampling results, if the Navy believes that a sample exceeding its RG and BTV from the 2020 Final Background Study Report represents background, the Navy should	The following new text has been added to Section 5.5: ***"The burden of proof will be on the Navy to demonstrate that results above an RG are not site-related."***

Comment #	Page (§)	Comment	Response
		submit an analysis supporting its conclusion for EPA and State review. The agencies will evaluate the information on a case by case basis. EPA is not, at this time, agreeing that any results exceeding an RG or previously agreed to BTV represent background. The burden of proof will be on the Navy to demonstrate that results above an RG or BTV are not site-related.	
34	Section 7.5, Compliance with CERCLA Off-Site Rule, Page 7-12	The text states, "With Navy approval, Gilbane will request proof of Off-Site Rule approval from the off-site disposal facility before transferring any wastes to that facility." Gilbane or the Navy should also confirm with EPA's Region 9 Off-site Rule Coordinator that the disposal facility has current offsite rule approval before shipment of any wastes.	Section 7.5 now reads as follows (new text in bold): *"With Navy approval,* ***Gilbane will confirm with EPA's Region 9 Off-site Rule Coordinator that a disposal facility has current offsite rule approval before shipment of any wastes****, and will request proof of Off-site Rule approval from the off-site disposal facility before transferring any wastes to that facility."*
35	Section 8.4.2, Stockpile Control, Page 8-2	According to this section, "All stockpiles will be covered with plastic or tarps at the end of shift or when stockpile additions or removals are complete and will be monitored on a weekly basis." Please revise Section 8.4.2 to ensure that monitoring occurs more frequently than weekly before, during, and after storms or high winds to ensure that the stockpile coverings are functioning as intended. Also, please ensure that this section is consistent with Appendix E (Dust Management and Air Monitoring Plan) which states, "Water, a temporary cover, or chemical soil stabilizer will be applied to control fugitive dust emissions from stockpiled material when not actively handled, at the end of each workday for active stockpiles, or as needed during high winds." Water may not be effective during periods of high wind which may dry stockpile surfaces.	Section 8.4.2 now reads as follows (new text in bold): *"All stockpiles will be covered with* ***a temporary cover or chemical soil stabilizer*** *at the end of the shift or when stockpile additions or removals are complete. Stockpiles will be monitored* ***at a minimum*** *on a weekly basis,* ***and daily before, during, and after storms or periods of high winds****."*
36	Section 8.5, Air Quality and Dust Control, Pages 8-2 to 8-4	Please make any needed revisions to this section to reflect changes made to Appendix E (Dust Management and Air Monitoring Plan).	Changes made as necessary for consistency.
37	Section 8.6, Noise Prevention, Page 8-4	The text states that Gilbane will endeavor to limit noise at the HPNS boundary to 70dBA. Please specify project working hours and whether project work may occur on Saturdays or Sundays. We note the proximity of residences to some of the planned work areas.	The following text has been added to Section 8.6: ***"Due to concerns from local residents on and around the shipyard, heavy equipment operations generally are not permitted prior to 0700 hours nor after 1800 hours daily, and no vehicles are allowed to park or idle at the Hunters Point entrance before or after work hours. Work on Saturdays and Sundays is***

Comment #	Page (§)	Comment	Response
			not expected, however if necessary will require advance approval by the Navy, ROICC, and CSO Representatives."
38	Appendix A, Sampling and Analysis Plan, SAP Worksheets #3, #5, #6 and #7	Please substitute Wayne Praskins for Judy Huang as the USEPA point of contact.	SAP Worksheets #3, #5, #6, and #7 have been revised to substitute Wayne Praskins as the USEPA point of contact for Judy Huang.
39	Appendix A, Sampling and Analysis Plan, SAP, Worksheet #11, Page 41	The text includes the statement that "If one Phase 2 TU does not meet the Amended Parcel B ROD RAO, then all Phase 2 TUs will be excavated." This statement differs from (although is not inconsistent with) a statement in Section 3.1 that "If any one Phase 2 TU does not meet the Parcel B ROD RAO, the TU will be excavated." Please comment.	The subject text of Worksheet #11 on Page 41 has been revised as follows to match Section 3.1: "o If any one Phase 2 TU does not meet the Amended Parcel B ROD RAO, then the Phase 2 TU will be excavated."
40	Appendix A, Sampling and Analysis Plan, SAP, Worksheet #12, Page 46	The table requires the collection of field duplicates for 10 percent of field samples collected. In response to an EPA comment on the draft retesting work plan for Parcels D-2, UC-1, UC-2, and UC-3, the Navy indicated that they did not plan to collect field duplicates at those parcels. Please confirm that field duplicates are planned for Parcel B.	Field duplicate samples will not be collected for Parcel B samples. Sample frequency is sufficient to adequately characterize potential variations in analytical parameters across the surfaces of the excavation. SAP Worksheets #12 and #20 have been revised.
41	Appendix A, Sampling and Analysis Plan, SAP Worksheet #14, Summary of Project Tasks, Section 14.2, Mobilization Activities, Page 50	The Building Investigation subsection in Section 14.2 includes "Implementation of dust control methods and air monitoring, if warranted" as a possible activity. Please clarify when and how it will be determined if dust controls and air monitoring are needed.	The second bullet of the summary of project tasks for the building investigation has been revised as follows: "• Implementation of dust control methods and air monitoring, if warranted as described in the Dust Control Plan (Appendix E to the Work Plan)"
42	Appendix A, Sampling and Analysis Plan, Figure 16-1	The schedule appears to assume that the Phase II TUs do not require excavation. We recommend that the figure indicate and/or reflect the possibility that the Phase II TUs require excavation.	Currently, only the Phase 1 trenches require excavation. Should conditions arise in which the excavation of Phase 2 trenches is deemed necessary, the schedule will be revised to include the expected durations for that task and submitted to the regulators.
43	Appendix B, Contractor Quality Control Plan, Section 10.3, Final Inspection, Page 30	Section 10.3 indicates that the Quality Control Manager (QCM) and the Resident Officer in Charge of Construction (ROICC) will be present during the final inspection. Please ensure that the USEPA, California DTSC, and Regional Water Quality Control Board project coordinators are invited to attend the final inspection with the QCM and the ROICC.	The Navy RPM provides regular field work updates during weekly meetings. The regulatory agencies and other stakeholders will be notified of the construction completion inspections and invited to attend.

Comment #	Page (§)	Comment	Response
44	Appendix E, Section 1.0 Introduction, 3rd Paragraph	The discussion in the Parcel B, Appendix E, Dust Management and Air Monitoring Plan (DMP) regarding nearby receptors and monitoring scale currently states: "The nearest residential receptors are located at the San Francisco Shipyard at 11 Innes Court, approximately 100 meters southwest of the Parcel B boundary. In addition, approximately 75 meters south of Parcel B, public receptors are present at a commercial kitchen and artist studios in the 100 block of Horne Avenue. The air quality monitoring is appropriate to assess potential impacts to the nearby residents and public receptors, in addition to on-site workers. The air monitoring stations will assess potential middle scale impacts to residents and public receptors within 500 meters of the site." However, for the purpose of air monitoring representativeness, microscale is typically used for distances of 100 meters or less, and medium scale is used for distances of 100-500 meters. Spatial scale is an important consideration in designing air monitoring programs to ensure that the impacts of air emissions to the public are assessed properly Also, in addition to the nearby SF Shipyard, commercial kitchen, and artist studios, there appear to be several buildings on Parcel B that are in use, including 115/116 and 125.Those potential receptors should be included in this discussion and considered in the sampling design. Please update the Work Plan to describe the monitoring scale and potential receptors more accurately.	Section 1.0 now reads as follows (new text in bold): *"In addition,* ***public receptors are present at several buildings on Parcel B that are in use during daytime hours (Buildings 104, 115, 116, and 125) and,*** *approximately 75 meters south of Parcel B, public receptors are also present at a commercial kitchen and artist studios in the 100 block of Horne Avenue. The air quality monitoring is appropriate to assess potential impacts to the nearby residents and public receptors, in addition to on-site workers. The air monitoring stations will assess potential* ***microscale*** *impacts to residents and public receptors within* ***100*** *meters of the site."*
45	Appendix E, Section 1.0 Introduction	The DMP does not include language regarding project signage and who to contact for questions or concerns regarding air quality. Please add language that states that: (1) a project sign will be installed near the site entrance or other appropriate location where it can be seen by the public, and (2) the sign will include project contact information for both the Navy and Gilbane personnel for reporting of dust or other air quality concerns.	The following text has been added to Section 1.0: ***"A project sign will be installed near the site entrance or other appropriate location where it can be seen by the public, which will include project contact information for both the Navy and Gilbane personnel for reporting of dust or other air quality concerns."***

Responses to Comments from EPA on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
46	Appendix E, Section 2.2.9 (Recycling) of (Dust Management and Air Monitoring Plan)	This section indicates that non-impacted asphalt and concrete will be recycled on site; however, details related to the stockpiling, active grinding, sorting, material handling, and loading associated with the asphalt recycling are not provided and/or referenced. Significant dust control was required during previous asphalt grinding operations at Hunters Point. Please revise the Work Plan to include details associated with the asphalt recycling.	Asphalt will not be recycled under this task order; the section has been revised to remove asphalt discussion.
47	Appendix E, Section 2.2.10 Wind Speed and Air Monitoring and Response	The Work Plan does not have specifications for the data quality and siting for the meteorological station. Also, the location of any potential windsocks on Parcel B are not shown on Figure 1. This section does indicate that the meteorological station will be at the site trailer in Parcel C, but the exact location is not provided on Figure 1. Note that wind speed and direction in the site trailer area may be influenced by topography and may not entirely correspond to Parcel B. Please add this information to the DMP and update Figure 1 accordingly.	Section 2.2.10 now reads as follows (new text in bold): *"The on-site meteorological station will be located* ***as shown on Figure 1, and will include a rain collection gauge, temperature sensor, humidity sensor, and anemometer.*** The windsock location has been added to Figure 1.
48	Appendix E, Section 3.0 Air Quality Monitoring Procedures, last paragraph	The DMP states: "The upwind and downwind dust monitors will enable emissions from off site to be considered in the 50 µg/m3 average per 24-hour day action level comparison, when wind speeds are greater than 5 mph and wind direction is constant over the sampling period. There will be situations, like stagnant conditions or when the wind direction varies during the data collection interval, where consideration of upwind is not appropriate." Please include decision criteria for site related concentration calculations similar to what is being used at Parcel G, in a table or attachment to the DMP.	Section 3.0 now reads as follows (new text in bold): *"There will be situations, like stagnant conditions or when the wind direction varies during the data collection interval, where consideration of upwind is not* ***clearly defined. Should the aforementioned conditions arise (i.e., should the wind speed average be less than 5 mph or should there not be a predominant wind direction for the day), the chosen upwind and downwind stations for action level comparison purposes will be selected based on the comparison which provides the highest potential variance between the two."***

Comment #	Page (§)	Comment	Response
49	Appendix E, Section 3.1 Air Quality Sampling and Real-Time Dust-Monitoring Locations	This DMP section lacks information about how air quality sampling and real-time dust monitoring locations were selected. In addition, the DMP should specify how many locations will be in use at the same time, decision criteria to switch between locations, and upwind and downwind pairing. The Navy should also include monitor siting best practices in the DMP, both in siting air monitoring stations and in siting individual monitors and samplers within each station. Distances from buildings and emissions sources not associated with Parcel B, like truck traffic or street sweeping for other activities taking place at the site, is recommended. Siting within individual stations to prevent interference from samplers or power sources is required. These best practices include: • Sites should be selected for long-term use when possible for data comparability purposes. • Sites should be selected away from buildings, topography, and other obstructions to the extent possible. • When samplers are sited together, a two-meter distance between radiation, asbestos, and high-volume samplers is required. Inlets for the radiation and asbestos samplers should be upwind from the high-volume samplers. The high-volume samplers pull a significant volume of air through filters and can potentially bias other samplers too close to their exhaust. • A 10 to 15-meter distance between diesel generators (if used for power source) from all samplers and real-time monitoring stations is required to prevent interference. Appropriate gauge extension cords for critical equipment must be utilized to maintain adequate voltage. • A 15-meter distance from excavation or other dust sources is recommended for all samplers and real-time monitoring stations. All excavation near monitoring locations must be documented and reported with the corresponding analytical data. Proximity to high truck traffic routes and/or idling trucks should also be considered. Please update this section of the DMP accordingly. See EPA Comment #55 on Figure 1 for more concerns about siting.	Section 3.1 now reads as follows (new text in bold): *"The actual air sampling and dust monitoring locations will be sited to represent ambient air and will be a sufficient distance from physical obstructions, non-site sources, and site sources to the extent practicable to obtain representative data. Air flow around buildings and obstruction will also be considered when establishing monitoring locations.* ***Wherever possible, monitoring locations will be located at least 15 meters away from excavations or other dust sources, and will be selected for long-term use for data comparability purposes.*** *There will be a minimum of two air sampling stations* ***in use at the same time****, one upwind and one downwind, each placed at one of the potential locations shown on Figure 1. For air sampling stations* ***with radiation and/or asbestos sampling equipment,*** *sampler inlets will be placed approximately 2 meters away from* ***and upwind of*** *high-volume samplers. Inlets for collocated real-time dust monitors will be placed one meter apart. Inlet heights for air samplers and the dust monitors range from approximately 4.5 to 5.5 feet above the ground surface.* ***If used as a power source, diesel generators will be located at least 10- to 15-meters from all samplers and real-time monitors.*** *Weather forecasts will be checked daily at www.noaa.gov to determine the prevailing wind direction(s),* ***which will be used to determine sampler station locations, as well as upwind and downwind designations."***

Responses to Comments from EPA on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
50	Appendix E, Section 3.2.1 Total Suspended Particulates, Manganese, and Lead and Section 3.2.2 PM 10	These sections of the DMP do not include information about how flow rate calculations will be performed. It is recommended that mass flow controlled high volume PM10 and TSP/metals samplers be used. If mass flow controlled samplers are not used, flow should be calculated using the pre and post pressure drop across the filter to compensate for the effects of filter loading. Please reference commonly accepted SOPs for calculating flow rate. The types of samplers used, and flow rate calculations must be specified in the DMP and associated SOPs.	Gilbane SOP for Perimeter Air Monitoring (PR-TC-02.02.03.04) which details flow rate calculations is now included in Attachment 2 and referenced in Section 3.2.1.
51	Appendix E, Section 3.2.4.2 Dust Monitoring for Off-Site Receptors, Paragraph 1	This section includes the following statement: "Figure 1 shows the dust-monitoring locations specified by California Department of Toxic Substances Control (DTSC) (May 2019)." EPA believes that DTSC did not specify dust monitoring locations in Parcel B and this has been included in error. Please remove this sentence.	The clause citing dust monitoring locations proposed by the DTSC has been removed.
52	Appendix E, Section 3.2.4.2 Dust Monitoring for Off-Site Receptors	This section states that SidePakTM aerosol monitors will be used for real-time dust monitoring. EPA believes that these monitors are acceptable for the intended purpose. However, the Navy should note that this data may not be comparable to DustTrak II data collected elsewhere at the site. Mass measurement readings may differ under the same conditions. Also note that both the SidePakTM and DustTrak II samples are not accurate when PM2.5 concentrations are extremely high, including during wildfire smoke events.	The Navy's opinion is that SidePak and DustTrak II data will be comparable, as both are calibrated aerosol monitors that measure PM1, PM2.5, respirable, and/or PM10 concentrations. The comment is noted.
53	Appendix E, Section 3.2.6 Field Quality Control Procedures	This section lists key elements of the routine field QC program. Please add monthly or weekly flow rate verification using an external National Institute for Standards and Technology (NIST)-traceable flow meter, and add this this verification to the existing row "Dust (measured as PM10)" of Table 4 pg. 1, so that the Laboratory/Field Control Sample (Accuracy) reads: "Weekly flow rate check with external NIST traceable flow calibrator; 3 L/min tolerance ± 5%." EPA Comment #58 also addresses this omission.	The additions to Section 3.2.6 and Table 4 have been made as requested.

Responses to Comments from EPA on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
54	Appendix E, Section 4.0 Data Review and Reporting states	"The Navy will report dust-control activities, wind data, and PDR results to EPA and DTSC on a weekly basis. Air-sampling reports will be prepared as analytical results are received from the laboratory and electronically submitted biweekly (depending on the receipt of analytical data) to the Navy." Please provide example reports as an attachment to the Work Plan so that EPA can evaluate whether it contains all necessary components.	An example report has been added to the document as Attachment 4 – Example Air Monitoring Report
55	Appendix E, Figure 1	Figure 1 shows five potential upwind and five potential downwind monitoring locations. However, the predominant wind direction on the map appears to show that several of the monitoring locations marked as upwind are potentially downwind, and some of the downwind locations are not properly sited to capture downwind emissions from activities at Parcel B or impacts from site activities on onsite and offsite workers and residents. It is also not clear how many upwind and downwind monitors will be in use at the same time and how upwind and downwind monitoring locations will be paired. Figure 1 does not show where real-time dust monitors will be located. Figure 1 also does not include the proposed location(s) for the RSY pads or trench units. Please clarify where real- time dust monitors will be located and add potential RSY pad and trench unit locations to Figure 1. EPA proposes a meeting and possible site walk to discuss this issue in more detail and to come up with monitoring locations that represent the best possible upwind and downwind monitoring locations for work activities at Parcel B. See EPA Comment #49 for additional concerns on monitor siting.	Figure 1 has been revised to include trench locations and remove monitoring locations that were not properly sited. Section 3.2.4.2 now reads as follows (new text in bold): *"Figure 1 shows the **proposed potential** dust monitoring locations, **which are collocated with TSP, PM10, and asbestos sampling equipment."*** RSY pads may be located anywhere within the parcel, depending on where specific trenching and drilling activities are to occur. RSY pads will be non-permanent, perhaps single-use. For the purposes of Figure 1, the entire parcel is considered to require monitoring.
56	Appendix E, Figure 2	Figure 2 shows a wind rose from San Francisco International Airport, but it is titled "Wind Rose Parcel E." Please update the figure name and clarify that this wind rose is included to show that the predominant wind direction is from the W or NW, in the narrative of the DMP.	The Figure title has been corrected. Section 2.2.10 now reads as follows (new text in bold): *"Wind roses from **San Francisco International Airport** and Parcels B 1, C, and UC 2 are provided on Figures 2 and 3, respectively, **which demonstrate that the predominant wind direction is from the west or west-northwest."***

Responses to Comments from EPA on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
57	Appendix E, Table 3 Air-Sampling and Dust-Monitoring Frequency and Sample Collection Methods	Please update the sampling method for the real-time dust monitoring from DustTrak II to SidePakTM, consistent with the rest of the DMP.	Revision made as requested.
58	Appendix E, Table 5 Air-Sampling Unit Flow Checks and Controls	Consistent with EPA Comment #53 please update this table to add flow rate verification using an external National Institute for Standards and Technology-traceable flow meter at regular intervals, or whenever units are moved as shown below.	Added as requested.
59	Appendix E, Attachment 2 Gilbane Standard Operating Procedures and Field Forms	Gilbane Standard Operating Procedures and Field Forms are missing from the DMP. Please transmit them to EPA for review. EPA may have additional comments on the Standard Operating Procedures and Field Forms.	The SOPs and field forms have been added to Attachment 2.

60	Section 3.1, Section 4.1, and SAP Worksheet #11 (Appendix A): These sections include "if…then" decision rules in Step 6 of the DQO process. EPA guidance (EPA/240/B-06/001, February 2006) recommends that these statements be included in Step 5. The guidance describes Step 6 as including "the performance or acceptance criteria that the collected data will need to achieve in order to minimize the possibility of either making erroneous conclusions or failing to keep uncertainty in estimates to within acceptable levels."	For consistency, Section 3.1, Section 4.1, and SAP Worksheet #11 have been written to mimic the structure of the decision rules included in the previously-approved Parcel G Work Plan (CH2M Hill, 2019).
	Section 3.6.4.1, page 3-28: typo in "The depth, recovery position, and gamma scan measurement information will correlated to each sample extracted from the core."	(Section 3.6.4.1) The referenced sentence was corrected to read, "*…will be correlated…*"
	Section 4.4.1.2. In the first full par on page 4-6, should "soil" be "building surface"?	(Section 4.4.1.2) The referenced sentence was corrected to read, "*To minimize the potential for release building surfaces with concentrations above the RG,…*"
	Section 4.4.3.1, Building 103, Page 4-7. There appear to be discrepancies in how the survey units are described in the text and in Table 4-4 and shown in Figures 4-2 and 4-3. - The text states that suvey units SU-013 and SU-015 were combined into a single SU (SU-113), but Figure 4-2 still shows SU-013 and SU-015 - The table lists a SU (SU-032) not shown on Figure 4-3. - The text states that a new SU (SU-033) was added, but we could not locate this SU in the figures. Figure 4-5. Table 4-4 refers to SU-16 which we could not locate in the figure.	(Section 4.4.3.1, Figures 4-2 and 4-3) Figure 4-2 shows both SU-013 and SU-015 but shows them both within the same SU boundary. A note was added to Figure 4-3 that SU-032 and -033 are found in a small concrete room in crawl space and are not shown. With the addition of the note, a total of 32 survey units – as described in the text – are represented in Figure 4-2 and 4-3.
	Table 4-4. There appears to be a typo in the title as this table covers more than Building 140.	(Figure 4-5) The figure was modified to include SU-16.
	Figure 4-5. Should the figure title read "Building 113A"?	(Table 4-4) The title was corrected to read, "*Table 4-4: Building Summary Table*"
	Equation 4-2: Should RG ($\alpha + \beta$) be RG (α or β)?	(Figure 4-5) The figure title was corrected as noted.
	Section 4.5.8.5: There is a typo in "tru" ("d = 3.28 (for 95% tru positive and 5% false positive)")	(Equation 4-2) The equation properly notes α or β.
	Appendix A, Worksheet #12. Footnote 4 appears to be missing from the table.	(Section 4.5.8.5) The noted typo was corrected.
	Appendix A, Worksheet #14, Section 14.3: The worksheet refers to 17 SUs associated with soil at building sites. Worksheet #17 refers to 15 SUs.	Appendix A, Worksheet #12. Footnote 4 has been added
	Appendix A, Worksheet #14, Section 14.3, Page 51: The worksheet includes a reference to the soil sorting process.	Appendix A, Worksheet #14, Section 14.3 has been corrected to 15 SUs.
	Appendix A, Worksheet #14, Page 54: Should the first bullet refer to alpha-beta scans rather than static measurements?	Appendix A, Worksheet #14, Section 14.3, Page 51 refers to soil screening being performed on radiological screening yard pads.

Comment #	Page (§)	Comment	Response
		Appendix A, Worksheet #15.9, Page 73: The entry for chlordane (analyte column) is truncated in the PDF.	Appendix A, Worksheet #14, Page 54 has been revised. Appendix A, Worksheet #15.9, Page 73, the entry for chlordane has been fixed.

Responses to Comments from CDPH-EMB on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
1		Please note that CDPH-EMB uses the following criteria in Title 17 of the California Code of Regulations, Section 30256(k) [17 CCR § 20256(k)] to base its evaluation for issuing a Radiological Unrestricted Release Recommendation (RURR): (1) Radioactive material has been properly disposed: (2) Reasonable effort has been made to eliminate residual radioactive contamination, if present, and; (3) A radiation survey has been performed which demonstrates that the premises are suitable to release for unrestricted use; or other information submitted by the licensee is sufficient that the premises are suitable for release for unrestricted use.	The comment is noted.
2	Section 3.1 "Data Quality Objectives, Step 4 – Define the Study Boundaries", Page 3-1, Paragraph 4, Sentence 1	"See Phase 1 and Phase 2 TUs and surface soil survey units (SUs) listed in Tables 3-1 through 3-3 and shown on Figure 3-1." Since TU-4, 26, 33, 36, 48 and 131 were not recommended by the Navy nor EPA/CDPH/DTSC for excavation, CDPH requests Navy to move TU-4, TU-26, TU-33, TU-36, and TU-131 from Phase 1 to Phase 2 of evaluation. In exchange, since TU-19, 42, 51A, 53, 55, and 60 were recommended by EPA/CDPH for resampling, CDPH requests Navy to move TU-19, TU-42, TU-51A, TU-53, TU-55 and TU-60 from Phase 2 to Phase 1 of evaluation.	As requested, TUs 4, 26, 33, 36, and 131 have been moved from Phase 1 to Phase 2; and TUs 19, 42, 51A, 53, 55, and 60 moved from Phase 2 to Phase 1.
3	Section 3.1 "Data Quality Objectives, Step 5 – Develop a Decision Rule", Page 3-2, Bullet Points	Following USEPA's 2018 comment on Draft Work Plan, Radiological Survey and Sampling, Former Hunters Point Naval Shipyard, San Francisco, California, February 2018, CDPH requests Navy to add another bullet point in a language similar to "If multiple Phase 2 survey units / trench units have contamination, then additional survey units / trench units may need 100% full excavation and treatment in a manner similar to Phase 1."	The current requirement to excavate any Phase 2 TU that does not meet the Parcel B ROD RAO is taken from the Parcel G Work Plan and is retained unchanged for purposes of consistency.

Responses to Comments from CDPH-EMB on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
4	Section 3.1 "Data Quality Objectives, Step 5 – Develop a Decision Rule", Page 3-2, Bullet Points and Appendix A, SAP Worksheet #11 – "Project Quality Objectives/Systematic Planning Process Statements (Continued), Step 5 Develop the Analytical Approach", Page 41	Please clarify the discrepancy in the decision rules listed in Section 3.1, Step 5 and SAP Worksheets #11, Step 5.	SAP Worksheet #11 now reads as follows: *"o If any one Phase 2 TU does not meet the Amended Parcel B ROD RAO, then the Phase 2 TU will be excavated.* *o If any soil survey unit (SU) (Worksheet #17) does not meet the Amended Parcel B ROD RAO, then the SU will be excavated.*
5	Section 3.3 "Remediation Goals", Page 3-4, Sentence 1	"The soil data from the radiological investigation will be evaluated to determine whether site conditions are compliant with the RAO in the Parcel B ROD (Navy, 2009)." The soil data should be evaluated against all Parcel B RODs available.	The Amended Parcel B Record of Decision for Hunters Point Shipyard, San Francisco, California (Navy, 2009) is the overarching document for the Parcel B Investigation.
6	Section 3.3 "Remediation Goals", Page 3-4, Table 3-5	Please add a footnote to Table 3-5 to clarify the Ra-226 RG is 1 pCi/g above background, in accordance with Parcel B ROD.	Table 3-5 was modified as recommended.

Responses to Comments from CDPH-EMB on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
7	Section 3.3.1 "Investigation Levels", Page 3-5, Paragraph 2, Sentence 5	"The analysis of gamma scan data collected by the RS-700 mobile gamma-ray detection system and triggers for further investigation are described in Section 3.5.1.1. ILs for other field instrumentation are typically equal to an upper estimate of the instrument and material-specific background, such as the mean plus three standard deviations." Please specify where the background (or reference) data will be obtained from.	Section 3.3.1 now reads as follows (new text in bold): *"Appropriate instrument- and site-specific gamma scan ILs for site ROC and gross gamma (i.e., full-energy spectrum) measurements will be* ***those deemed applicable by the Memorandum to File Regarding Radiological Remediation Goals for the Removal Site Evaluation Workplan for Parcels B, C, D-1, D-2. E. G. UC-1, UC-2, UC-3 (Navy, 2021), which were derived as part of the HPNS Background Soil Study (CH2M Hill, 2020). See Section 3.4.3 for additional information."*** The background (or reference) data will be obtained from Building 809.
8	Section 3.4.2 "Locating Samples", Page 3-8, Paragraph 1, Sentence 2	"The systematic soil samples will be plotted using a random start square grid using the VSP software (or equivalent) with GPS coordinates for each systematic sample." Please explain the reason of using square grid instead of the triangle grid finalized in Hunters Point Parcel G Work Plan.	Section 3.4.2 was modified to read, "*…systematic soil samples will be plotted using a random start triangular grid using the VSP software…*"
9	Section 3.4.3 "Radiological Background", Page 3-8, Paragraph 1, Sentence 1	"The RGs presented in Table 3-5 are incremental concentrations above background; therefore, RBA samples and measurements will be collected and evaluated to provide generally representative data sets estimating natural background and fallout levels of man-made radionuclides for the majority of soils at HPNS." According to Table 8-4 in Parcel B Amended Record of Decision, Hunters Point Shipyard, San Francisco, California 2009, the RGs for Radionuclides in Table 3-5 are NOT incremental concentrations above background, except Ra-226 RG being 1 pCi/g above background. Please correct the language in the 1st sentence specified in this comment.	The reference to RGs being incremental concentrations above background has been deleted.
10	Section 3.4.4 "Phase 1 Trench Unit Design", Page 3-9, Paragraph 2, Sub-bullet Point 1	"- Material thickness will not exceed 6 inches." Please clarify if the thickness of former trench sidewall and floor soil on RSY pad will exceed 6 inches.	Section 3.4.4 now reads as follows (new text in bold): *"- Material thickness will not exceed 9 inches,* ***regardless of whether the material has been re-excavated or is the additional sidewall/floor material."***

Responses to Comments from CDPH-EMB on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
11	Section 3.4.4.2 "Size of Phase 1 Trench Units", Page 3-10, Paragraph 2, Sentence 1	"Therefore, an individual ESU or SFU volume will not exceed 152 m3." Please clarify if the 152 m3 result is applicable if the soil thickness is more than 6 inches, and how the 152 m3 volume will be maintained if the soil thickness is more than 6 inches.	The document has been revised to indicate a maximum thickness of 9 inches; however, the survey unit volume will remain limited to 152 cubic meters.
12	Section 3.4.5 "Phase 2 Trench Unit Design", Page 3-11, Paragraph 3, Sentence 2"	"A stylized graphic of an example Phase 2 TU with 18 systematic boring locations placed using a square grid is shown on Figure 3-4." Please explain the reason of using square grid instead of the triangle grid finalized in Hunters Point Parcel G Work Plan.	The referenced sentence in Section 3.4.5 was modified to read, "*…systematic boring locations placed using a triangular grid…*"
13	Section 3.5.1.1 "RS-700 Gamma Scan Data Analysis", Page 3-14, Paragraph 2, Sentence 9	"Any location with four or more ROIs having a Z-Score, local Z-score, or semi-localZ-score, respectively, greater than 3 (Z>3) is marked for follow-up." Please describe what kind of investigations have been proposed for "follow-up".	Section 3.5.1.1 has been modified to better explain the process to be used: "***Contour maps will be created using the RS-700 data to aid in field investigations as well as to facilitate the selection of biased measurement locations. The mean and standard deviation of the data set will be calculated and used to develop color-coded contour maps based on sigma values (i.e., the number of standard deviations each measurement lies from the mean). The contouring process involved creating a regularly spaced grid and assigning values to every spot on the grid. Grid node values will be assigned using a weighted average based on the inverse square law, which describes how radiation levels drop off with distance from a source. Once the grid is complete, color-coded contours will be created from grid node values within the specified ranges of values. The contouring process tends to smooth over single data points with lower sigma values while accentuating clustered areas or single locations with higher sigma values. This is the desired effect which aids in the data analysis by focusing attention on those areas most likely to contain discrete radioactivity. Any area in excess of 3 sigma will be identified by coordinates and investigated by gamma scan using instrumentation other than the RS-700.***"

Responses to Comments from CDPH-EMB on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
14	Section 3.5.2.3 "Example Gamma Scan Minimum Detectable Concentrations", Page 3-16, Last Sentence	"The MDCR surveyor was then calculated assuming a surveyor efficiency (ρ) of 1 (assumes automated data logging)." Please explain how the surveyor efficiency (ρ) of 1 can be achieved. MARSSIM recommends that a surveyor efficiency assumption should be between 0.5 and 0.75.	A surveyor efficiency of 1.0 assumes automated data logging and post-processing of the scan data. The reliance on the surveyor to make a decision in the field based on instrument response is removed and replaced with post-processing of the data, which results in an efficiency of 100 percent. In other words, the surveyor efficiency is now based on numerical result rather than behavioral response.
15	Section 3.5.2.3 "Example Gamma Scan Minimum Detectable Concentrations", Page 3-17, Table 3-7	Gamma scan MDC calculations of Ra-226 and Cs-137 for 9-inch soil depth for Ludlum 44-20, 3x3 are not included in the Table 3-7. If Navy plans to use Ludlum 44-20, 3x3 or equivalent, to make scan or static measurement on 9-inch soil, please provide the MDC calculations of these instruments for both Ra-226 and Cs-137 for 9-inch soil depth.	The gamma scan MDC calculations are taken from the Parcel G Work Plan and are retained unchanged for purposes of modeling consistency. They are example MDCs only. The actual instrument MDCs will be calculated on an instrument-specific basis prior to instrument use.
16	Section 3.5.2.3 "Example Gamma Scan Minimum Detectable Concentrations", Page 3-17, Paragraph 3, Sentence 7	"In Table 3-7, the calculated gamma scan sensitivity for Cs-137 is not expected to be sufficient to detect Cs-137 at or below the RG. Therefore, compliance with the Parcel B ROD RAO for Cs-137 will be based on the analytical data from soil sampling." Please explain the method of analytical data for Cs-137 soil sampling compliance.	Section 3.5.2.3 now reads as follows (new text in bold): *"In Table 3-7, the calculated gamma scan sensitivity for Cs-137 is not expected to be sufficient to detect Cs-137 at or below the RG. Therefore, compliance with the Parcel B ROD RAO for Cs-137 will be based on* ***comparison of*** *the analytical data from soil sampling* ***to the remediation goal presented in Table 3-5.*** *"*
17	Section 4.1 "Data Quality Objectives, Step 7-Develop the Plan for Obtaining Data", Page 4-2	"Radiological investigations will be conducted on floors, wall surfaces, and ceiling surfaces of Buildings 103, 113,113A, 130, and 146; and on accessible interior surfaces of Building 140 consistent with the Technical Memorandum to Support Unrestricted Radiological Release of Building 140 Including the Suction Channel and Discharge Piping (TtEC, 2011). " Please provide justification why radiological investigation of these buildings only focusing on interior while excluding exterior of the building.	The Parcel B Rework task order is intended to confirm the acceptability of radiological work previously performed in the parcel. The building exteriors were not surveyed as part of the initial remediation process. The former Task-specific Plans provide task-specific details for the basis of the Final Status Survey (FSS) of each respective building.

Responses to Comments from CDPH-EMB on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
18	Section 4.4.3 "Survey Units", Page 4-7, Table 4-4	The title of Table 4-4, Building 140 Summary Table, appears to be inconsistent with the content in the table. Please modify the title or the content as needed.	The title of Table 4-4 was corrected to read, "*Building Summary Table.*"
19	Section 4.5.5 "Instrument Efficiencies", Page 4-10, Paragraph 1, Sentence 2	"These parameters will be updated as appropriate during the investigation for each instrument used." To facilitate the review process, CDPH requires Navy to include the instrument calibration reports that document the calculation and result of 2pi efficiencies utilized in the calculation of MDC during the investigation and remediation process in any future report. At the same time, CDPH requires Navy to maintain the same measurement method and geometry when measuring the instrument efficiency and taking readings in survey area during the investigation and remediation process.	MDCs are based on specific instrument performance which won't be known until the specific instruments to be used on the project are obtained, so generalized instrument data are used in the work plan that adequately represent the instrumentation. Future survey and/or construction summary reports will include the specific instrument calibration reports that document the calculation and result of 2pi efficiencies utilized in the calculation of MDC during the investigation and remediation process. In addition, the same measurement method and geometry will be used when measuring the instrument efficiency and taking readings in survey area during the investigation and remediation process.
20	Section 4.5.5 "Instrument Efficiencies", Page 4-10, Table 4-5	Table 4-5 shows 0.90 beta total efficiency (4 π) for Sr-90/Y-90, Cs-137, and Tc-99. Please provide the reference document on how 0.9 (4 π) total efficiency was calculated or reported.	The RSCS SCM will not be used; therefore, the Table 4-5 value for the Ludlum Model 43-37 will be used. The value is taken from the Parcel G Work Plan.
21	Section 4.5.5 "Instrument Efficiencies", Page 4-11, Paragraph 1, Sentence 9 and Page 4-12, Table 4-6	"Since radon (222Rn) is a gas, a fraction of its concentration may escape the building area before decaying…" and Rn222's Equilibrium Fraction value of 1.0 in Table 4-6. Please explain how a fraction of Rn222 may escape the building before decaying while the equilibrium fraction can still be assumed to be 1, or 100% in Table 4-6. If the equilibrium fraction of Rn222 is adjusted, please modify the equilibrium fraction of its progenies accordingly.	The cited text has been deleted. In addition, a sentence was added stating, "*An equilibrium fraction of 1 is used for conservatism, such that any radon progeny are assumed to remain on the contaminated surface*".
22	Section 4.5.5 "Instrument Efficiencies", Page 4-12, Table 4-6	Please provide the reference document or detailed calculation steps for all the estimated 4pi efficiencies for all the instruments listed in Table 4-6.	The efficiencies listed in Table 4-6 are taken from the Parcel G Work Plan.

Responses to Comments from CDPH-EMB on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
23	Section 4.5.8.4 "Probability of Alpha Detection for Small Area Detectors", Page 4-17, Equation 4-4	In the calculation of Equation 4-4, total efficiency value taken from Table 4-6 as E=0.602. However, total efficiency of Ludlum Model 43-68 in Table 4-6 shows E=0.560. Please explain the discrepancy and make additional changes throughout to the document to reflect the correct total efficiency value.	The correct efficiency value is 0.560. The example calculation given in Section 4.5.8.4 was modified to use the correct efficiency, resulting in a corrected alpha detection probability of 96.3 percent.
24	Section 4.5.8.4 "Probability of Alpha Detection for Small Area Detectors", Page 4-18, Equations 4-5 and 4-6	In the denominator of the Equation 4-5; detector (,) and surface (,) efficiencies are included and consistent with MARSSIM Equation 6-10. However, in the following Equations of 4-6 and 4-7 detector total 4-pi efficiency has been used. Please provide explanation how different type of surfaces can be accounted using 4-pi efficiency in Equation 4-6 and 4-7.	The sentence preceding Equation 4-6 defines the total efficiency $\varepsilon_{T,\beta} = \varepsilon_{i,\beta} \cdot \varepsilon_{s,\beta}$, which is the same as Equation 4-5, but annotated differently. A 4-π efficiency is not used.
25	Section 4.5.8.8 "Beta Static Minimum Detectable Concentration", Page 4-21, Paragraph 2, Sentence 1 and the footnote of Table 4-9	"The alpha and beta static MDCs for each survey instrument and ROC are presented in Table 4-9 for 1-minute measurements in the SUs and RBAs." On the other hand, a footnote of Table 4-9 states that "SU background static measurement count times = 2 minutes." Please explain this discrepancy.	Example alpha and beta static MDCs for each survey instrument and ROC are presented in Table 4-9 using a 1-minute measurement count and a 2-minute background count time. The Table 4-9 note has been modified to explain the use of a 2-minute measurement count time will lower the example MDCs in the table.
26	Section 4.5.8.8 "Beta Static Minimum Detectable Concentration", Page 4-21, Table 4-9	Please provide all input parameters that were used for calculation of MDC in Table 4-9.	The inputs used in the Table 4-9 values are explained in the text found in Sections 4.5.8.7 and 4.5.8.8, or found in the table note.

Responses to Comments from CDPH-EMB on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
27	Section 4.6.3.2 "Survey Unit and Reference Background Area Alpha-Beta Scanning", Page 4-24, Last Sentence	"The scan rates for other planned instruments (e.g., Ludlum Model 43-37 and Ludlum Model 43-68) are manually controlled by the surveyor and will be verified manually in each SU by direct observation and measurement of the time elapsed while scanning a known distance." Please describe a method that Navy will document and provide the verification of scan rate achieved during the field work.	Section 4.6.3.2 now contains the following new text: ***"Lanes of approximately 1 meter in width will be marked out within each SU. Lane width may be adjusted as necessary to ensure 100 percent scan coverage. The technician(s) performing the survey will make a note of what corner of the SU the survey will start from (northeast, southwest, etc.), and the direction of travel within each lane. During the survey, the technician will record the observed count rate approximately once every meter while surveying within the designated lane. Survey lanes shall be identified by the use of survey pin flags, cones, or other similar markers."***
28	Section 4.6.3.2 Survey Unit and Reference Background Area Alpha-Beta Scanning, Page 4-24 Last Sentence	"The scan rates for other planned instruments (e.g., Ludlum Model 43-37 and Ludlum Model 43-68) are manually controlled by the surveyor and will be verified manually in each SU by direct observation and measurement of the time elapsed while scanning a known distance." Please provide justification on how the proper scan rate will be derived and calculated.	See response to previous comment.
29	Section 4.6.3.3 "Survey Unit Systematic Alpha-Beta Static Measurements", Page 4-25, Paragraph 3, Sentence 1	"Each static measurement will be performed in scaler mode for a count duration sufficient to ensure that the alpha and beta static MDCs are equal to or less than the RGa and RGb for the building, respectively." Please provide explanation how this method can accommodate various types of surfaces present in the building.	Section 4.6.3.3 now reads as follows (new text in bold): *"Each static measurement will be performed in scaler mode for a count duration sufficient to ensure that the alpha and beta static MDCs are equal to or less than the RGa and RGb for the building, respectively.* ***Variation in surface types are accommodated by utilizing standard surface efficiency values included in the International Organization for Standardization (ISO) guidance document for evaluation of surface contamination (ISO, 1988)."***
30	Section 5.6 "Determine Equilibrium Status", Page 5-11, Sentence 1	"…analyzing a sample for multiple radionuclides from the series using the same or comparable analytical techniques." Please describe what are the analytical techniques that you are referring to.	The analytical techniques that may be used include statistical quantities such as mean, median, and variance comparisons; and graphical tools such as regression plotting using the laboratory results and their related uncertainties.

Responses to Comments from CDPH-EMB on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
31	Appendix A "SAP Worksheet #37 – Usability Assessment (Continued)", Page 177, Paragraph 2, Sentence 1	"The DL is the minimum quantity of an analyte that can be reliably distinguished from background noise or from zero for a specific analytical method at a 99 percent confidence level." Please give explanation and detail of the specific analytical method that ensures a 99 percent confidence level is achieved.	The details of the specific analytical methods for which DLs are provided on Worksheets #15.6 though #15.13 are presented on Worksheets #19, #23, #24, #25, and #28.
32	Appendix C, Attachment 1, "Radiation Instruments and Equipment, C.6 Minimum Detectable Concentration", Page 6, Bullet Point 2	"Alpha/Beta Smears of Building and Structure Surfaces – The MDC for smear counting is calculated as described above for static measurements, in units of dpm/smear, but with εi and εs terms replaced by the smear counter's calculated 4π detection efficiency (εT)." Please give explanation when εi and εs terms are replaced by 4π detection efficiency (εT), how the smear counting can accommodate to the potential removable contamination from different types of surfaces.	The surface efficiency, ε_s, is a measure of the detectability of the particle emissions from the surface being measured. In the case of a smear sample, there is no surface being measured. Rather, the activity on the smear is being measured in a relatively static environment (i.e., on a smear in the sample tray). Using a 4-π (or total) efficiency simply aggregates the variables into a single term as the surface impact on detectability is considered constant.

Responses to Comments from DTSC on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
1	Section 3.1, Step 5	"If any one Phase 2 TU does not meet the Parcel B ROD RAO, the TU will be excavated." This differs from the G Evaluation Work Plan for radiological rework. Please clarify.	The Parcel G Evaluation Work Plan states: *"If any Former Building Site and Crawl Space soil SUs or Phase 2 TU does not meet the Parcel G ROD RAO, the SU or TU will be excavated."* Section 3.1 now reads as follows (new text in bold): *"> If any one **surface soil SU or** Phase 2 TU does not meet the Parcel B ROD RAO, the TU will be excavated."*
2	Section 3.6.3.2 Radiological Screening Yard Pad Process	This Section states, Excavated TU materials will be transported to an RSY pad and spread approximately 6 inches thick for processing. While Section 3.6.3.2.2, first sentence, indicates TU materials will be, leveled to a maximum depth of 9 inches. Please correct.	Section 3.6.3.2.2 has been revised to indicate a maximum thickness of 9 inches.
3	Appendix E Dust Monitoring Plan, Section 2.2	General Construction Dust-Control Methods – A list of emissions that may be generated are listed, however, the last bullet is not an emission. Please correct.	The last bullet has been deleted.
4	Appendix E Dust Monitoring Plan, Section 2.2.6	Soil Processing and Management – This section describes dust emissions that will be generated from the soil sorter. DTSC suggests deleting this section.	References to a soil sorter or conveyors have been removed.
5	Appendix E Dust Monitoring Plan, Section 3.2.4.2	Dust Monitoring for Off-site Receptors – The first paragraph references to DTSC's memorandum on Parcel G (May 2019) and states that, Figure 1 shows the dust-monitoring locations specified by California Department of Toxic Substances Control (DTSC) (May 2019). The referenced memorandum refers to Parcel G and, DTSC has not specified dust-monitoring locations for Parcel B. We are currently preparing a DTSC memorandum which lists DTSC recommended dust-action levels for Parcel B, specific to Parcel B remediation goals for soil. This memo will be submitted the week of March 22, 2021. Please revise this paragraph accordingly.	Section 3.2.4.2 and Section 5.0 have been updated to reference the California Department of Toxic Substances Control, 2021, *Human and Ecological Risk Office (HERO) Memorandum, Dust Action Levels for Parcel B, Hunters Point Naval Shipyard, San Francisco, California*, March 24.
6	Appendix E Dust Monitoring Plan, Figure 1	The proposed air sampling locations do not all appear to be appropriate locations given the prevailing wind direction shown on Figure 1, e.g. location near building 113A may need to be a downwind location being located at one of the southern borders of the Parcel. Wind direction should be evaluated and monitors placed appropriately.	The proposed monitoring locations on Figure 1 have been revised.

Responses to Comments from DTSC on the
Draft Work Plan, Site Evaluation Work Plan, Radiological Investigation, Survey, and Reporting
Parcel B, Hunters Point Naval Shipyard (HPNS)
San Francisco, California, December 2020

Comment #	Page (§)	Comment	Response
7	Appendix B CERCLA Stormwater Plan	The stormwater plan includes the use of fiber rolls, straw waddles, or equivalent. The Plan should be clear that these types sediment barriers must not contain plastic netting which can entangle wildlife. These barriers are discussed in Sections 3.6.3.2.1 and 8.4.2.	Stormwater Plan Section 3.2.3 now contains the following new text: *"Fiber rolls will not contain plastic netting which can entangle wildlife."*
8	Appendix A SAP, Worksheet #4, #5 and #6	Contacts for the Water Board and the USEPA should be updated.	Contacts for the Water Board and the USEPA have been updated on Worksheets #3, #5, and #6.
9	Appendix A SAP, Worksheet #9	Contacts for the Navy should be updated.	Contacts for the Navy have been updated on Worksheet #9.
10	Appendix A SAP, Worksheet #11, Step 5 (Develop the Analytical Approach)	Indicates, If one Phase 2 TU does not meet the Amended Parcel B ROD RAO, then all Phase 2 TUs will be excavated. This differs from the other final and draft Parcel Evaluation Work Plans (Parcel G, D-2, UC-1, 2, 3). Please clarify.	SAP Worksheet #11 now reads as follows: *"o If any one Phase 2 TU does not meet the Amended Parcel B ROD RAO, then the Phase 2 TU will be excavated.* *o If any soil survey unit (SU) (Worksheet #17) does not meet the Amended Parcel B ROD RAO, then the SU will be excavated.*